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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/789,223	02/27/2004	Kaoru Usui	MM4704	7958

1109 7590 03/10/2005

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1251 AVENUE OF THE AMERICAS  
NEW YORK,, NY 10020-1182

EXAMINER

SMITH, TYRONE W

ART UNIT	PAPER NUMBER
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2837

DATE MAILED: 03/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/789,223

Applicant(s)

USUI ET AL.

Examiner

Tyrone W. Smith

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 2/27/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## DETAILED ACTION

### **Claim Rejections - 35 USC § 102**

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 9-16 rejected under 35 U.S.C. 102(b) as being anticipated by Novis et al (4816726).

Regarding Claim 9. Novis discloses a method and arrangement for controlling an H-bridge electric motor (Figure 1), which discloses turning OFF the first transistor (Figure 1 items A or B) and turning ON the second transistor (Figure 1 items C or D) in accordance with a brake operation instruction signal (Figure 2) and forcing the first transistor to be turned OFF in accordance with the brake operation instruction signal. Refer to column 4 lines 44-68 and column 5 lines 1-33.

Regarding Claim 10. Novis discloses the first transistor controls supplying of a drive current to the motor, and the second transistor controls drawing of the drive current from the motor (Figure 2).

Regarding Claims 11 and 14. Novis discloses the first and second transistors are each formed by an NPN transistor (column 5 lines 8-16), and the step of forcing the first transistor to be turned OFF is performed by lowering a base potential of the first transistor (column 6 lines 65-68 and column 7 lines 1-33).

Regarding Claims 12, 13, 15 and 16. Novis discloses the step of forcing the first transistor to be turned OFF (Figure 2) is performed by turning ON a switching element/driver (Figure 1 item 19; column 6 lines 64-68 and column 7 lines 1-33) that is provided between the connection point between the first and second transistors and the motor and a base of the first transistor in accordance with the brake operation instruction signal. It should be noted that Novis describes item 19 of Figure 1 as a switch driving or translating circuit.

### **Claim Rejections - 35 USC § 103**

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-8 rejected under 35 U.S.C. 103(a) as being unpatentable over Novis et al (4816726) in view of Uchiyama et al (6072292)

Regarding Claim 1. Novis discloses a method and arrangement for controlling an H-bridge electric motor (Figure 1 item 1) that is connected between the first (Figure 1 items 11 or 12) and second (Figure 1 items 13 or 14) transistor, which discloses turning OFF the first transistor and turning ON the second transistor in accordance with a brake operation instruction signal (Figure 1 item 19 and Figure 2) from the control circuit (Figure 1 items 21-48) and forcing the first transistor to be turned OFF in accordance with the brake operation instruction signal. Refer to column 4 lines 44-68 and column 5 lines 1-33. However, Novis does not disclose a second brake control circuit or similar that forces the first transistor to be turned

OFF in accordance with the brake operation instruction signal independently from the first brake control circuit.

Uchiyama discloses a drive circuit of motor, which includes two control circuits (Figure 1 item 27) in which one of the control circuit forces the first transistor to be turned OFF (Figure 1 item 43) in accordance with the operation instruction signal independently from the other control circuit. Refer to column 3 lines 1-67 and column 2 lines 1-63.

In re Harza, 274 F.2d 669, 124 USPQ 378 (CCPA 1960) (Claims at issue were directed to a water-tight masonry structure wherein a water seal of flexible material fills the joints which form between adjacent pours of concrete. The claimed water seal has a "web" which lies \*\* in the joint, and a plurality of "ribs" \*\* >projecting outwardly from each side of the web into one of the adjacent concrete slabs. <The prior art disclosed a flexible water stop for preventing passage of water between masses of concrete in the shape of a plus sign (+). Although the reference did not disclose a plurality of ribs, the court held that mere duplication of parts has no patentable significance unless a new and unexpected result is produced.). In this case, the current invention uses the two braking type control circuits in order to enhance braking control which is a mere duplication of parts. By duplicating Novis switching controller would enhance that invention.

It would have been obvious to one of ordinary skill in the art at the time of invention to use Novis a method and arrangement for controlling an H-bridge electric motor with Uchiyama discloses a drive circuit of motor that uses two control circuits for braking. The advantage of combining the two would provide a regenerative braking system that is automatically engaged for baking the vehicle in response to a sensed condition and wherein the regenerative braking system is disabled once the vehicle has stopped.

Regarding Claim 2, 3 and 6. Novis discloses the first transistor controls supplying of a drive current to the motor, and the second transistor controls drawing of the drive current from the motor (Figure 2).

It would have been obvious to one of ordinary skill in the art at the time of invention to use Novis a method and arrangement for controlling an H-bridge electric motor with Uchiyama discloses a drive circuit of motor that uses two control circuits for braking. The advantage of combining the two would provide a regenerative braking system that is automatically engaged for baking the vehicle in response to a sensed condition and wherein the regenerative braking system is disabled once the vehicle has stopped.

Regarding Claims 4, 5, 7 and 8. Novis discloses a switching element (Figure 1 item 19; column 6 lines 64-68 and column 7 lines 1-33) provided between the connection point between the first (Figure 1 items 11 or 12) and second (Figure 1 items 13 or 14) transistor and the motor (Figure 1 item 1) and a base of the first transistor; and a control circuit (Figure 1 items 21-48) that turns ON the switching element in accordance with the brake operation instruction signal. It should be noted that Novis could duplicate the switching circuit for enhanced braking control. Uchiyama discloses a control circuit/switching element (Figure 1 item 27) provided between the connection point between the first (Figure 1 items 53 and 45) and second (Figure 1 item 42 and 44) transistor and the motor (Figure 1 item 23) and a base of the first transistor; and a control circuit control circuit/switching element (Figure 1 item 27) that turns ON the switching element in accordance with the operation instruction signal.

It would have been obvious to one of ordinary skill in the art at the time of invention to use Novis a method and arrangement for controlling an H-bridge electric motor with Uchiyama discloses a drive circuit of motor that uses two control circuits for braking. The advantage of combining the two would provide a regenerative braking system that is automatically engaged

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for baking the vehicle in response to a sensed condition and wherein the regenerative braking system is disabled once the vehicle has stopped.

### **Conclusion**

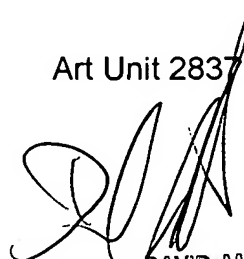
5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Pertinent art of record related to braking and/or control of motor systems is disclosed in the PTO-892.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tyrone W. Smith whose telephone number is 571-272-2075. The examiner can normally be reached on weekdays from 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Martin, can be reached on 571-272-2800 ext. 37. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tyrone Smith  
Patent Examiner

Art Unit 2837  
  
DAVID MARTIN  
SUPERVISORY PATENT EXAMINER  
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